

ABSTRACT**FORMATION OF A CONTACT IN A DEVICE, AND THE DEVICE INCLUDING THE CONTACT**

A method of forming a contact to an underlayer of a device includes the steps
5 of forming a contact hole, forming a contact hole barrier layer of a barrier
material in the contact hole of the device, etching the contact hole barrier
layer on the bottom surface of the contact hole, depositing a liner material in
the contact hole, and filling the contact hole with a conductive material. A
device such as a semiconductor, passive device, capacitor or FeRAM is
10 formed in accordance with the method. The portions of the contact hole
barrier layer on the side walls of the contact hole inhibit lateral diffusion of
hydrogen and/or oxygen. The contact hole barrier layer can be performed
after a wet etch process to fill voids in an existing barrier layer caused by that
process, or prior to the wet etch process to prevent damage to the existing
15 barrier layer.

Figure 6